

Oil Field Environmental Incident Summary

Incident: 20160215104727 **Date/Time of Notice:** 02/15/2016 10:47

Responsible Party: Aquaterra water managment USA

Well Operator: AQUA TERRA WATER MANAGEMENT USA, LLC

Well Name: BOREJAKS SWD 2

Field Name: MURPHY CREEK

Well File #: 90253

Date Incident: 2/12/2016 **Time Incident:** 07:45

Facility ID Number:

County: DUNN

Twp: 144

Rng: 95

Sec: 18

Qtr: NE NE

Location Description: Farm land

Submitted By: John Mcpherson

Received By:

Contact Person: Kevin Williams
277 Park Avenue, 29th Floor
New York, NY 10172

General Land Use: Well/Facility Site

Affected Medium: Topsoil

Distance Nearest Occupied Building: 1 Mile

Distance Nearest Water Well: 1 Mile

Type of Incident: Valve/Piping Connection Leak

Release Contained in Dike: No

Reported to NRC: No

	Spilled	Units	Recovered	Units	Followup	Units
Oil					0	barrels
Brine	78	Barrels	71	Barrels	71	barrels
Other			7	Barrels	7	barrels

Description of Other Released Contaminant:

NA

Inspected:

Written Report Received: 8/19/2016

Clean Up Concluded: 8/19/2016

Risk Evaluation:

na

Areal Extent:

na

Potential Environmental Impacts:

NA

Action Taken or Planned:

Install high level alarm in pump house in the sump to alarm operator

Wastes Disposal Location: sent to secure or ihd

Agencies Involved: called in to the state Talled to scott and Nicole

Updates

Date: 2/16/2016 **Status:** Reviewed - Follow-up Required

Author: Souder, Taylor

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

According to the report, the release was not contained. Further follow-up necessary.

Date: 2/17/2016 **Status:** Inspection

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

I talked to the contact on the spill report prior to arriving at the site. He had indicated that the ditches had been somewhat cleaned up, and they were waiting for One Call. Some of the release had made it to the field, but he did not think it was much. They were trying to contact the owner. I arrived at the site 9:21 a.m. The weather was cloudy and 32°F. The facility is located on the south side of the gravel road a couple hundred feet off of Highway 22. The produced water came out of the shed on the east side of tank battery and ran north into the ditch. It followed this ditch until the approach. The east side of the approach was frozen, and the field meter showed low levels. The remainder of the water flowed through a culvert and into the north ditch; it flowed east in the ditch flowing across a grassed area into the field. I checked the highway ditch. It was frozen, and the field meter showed low levels. I checked the field and found that there was a lower area, running northwest at least a couple hundred yards from the gate, that was soft and had field readings up to 8 millisiemens. I was able to show the company rep the area of concern; he will notify the company contact. I also left a message with the company contact. The contact got back to me, and I let him know what I had found. The contact got back to me a little while later and indicated that he had talked to the manager of the company. They would be getting a consultant out to assess the site. They were still working on contacting the landowner. More follow-up is needed.

Date: 2/17/2016 **Status:** Correspondence

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Later in the day the company manager called and indicated that he will be down early next week. I indicated that personnel from the NDDoH would meet him at the site. He will call with the time he will be at the site.

Date: 2/23/2016 **Status:** Correspondence

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Talked to the consultant; he had met with company personnel. They looked over the impacted areas. He will be getting the area delineated. More follow-up needed.

Date: 3/17/2016 **Status:** Inspection

Author: Washek, Sandi

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Arrived on site at 11:05 a.m. Weather was cloudy with light snow, wind out of the NW at 20 mph, temperature 21 degrees F. The stubble field to the north of the site has green flagging delineating the surface extent of the spill. Collected GPS points of the flagged area in three spots to show the east, west and north extent of the flagging. The east GPS reading is N47.29959, W102.75836. The furthest west flag was located at N47.29943, W102.75930, and the furthest north flag was N49.29987, W102.79935.

The ditch to the north of the entrance road has been dug down about 4-5 inches. Collected pictures of the area. Additional follow-up will be needed.

Date: 3/23/2016 **Status:** Correspondence

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Talked to the company contact that submitted the spill report. The landowner has been contacted and lives out of state. The landowner has asked the renter, who is a brother, to coordinate on finding replacement soil. The consultant is ready to start clean-up and is hoping to start this week.

Date: 4/13/2016 **Status:** Inspection

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

I arrived at the site 2:33 p.m. Weather was sunny and 61°F, with wind from the southeast 10-15 mph. There was still no work being done in the field to the north. I called the company contact; he thought that the work had started Monday. He also indicated that they had finally reached an agreement with the landowner on the cleanup. He was going to call the consultant regarding the cleanup. The consultant called me, indicating that the work would start later this week or early next week. He would also send a map to the NDDoH showing the delineation. More follow-up needed.

Date: 4/14/2016 **Status:** Correspondence

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Consultant I talked to emailed that his partner had the field notes on the impacted area and will be sending a map showing the impacted area. Consultant is hoping it will be sent tomorrow. More follow-up needed.

Date: 4/15/2016 **Status:** Correspondence

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

They will be sending map of impacted area. Looking at starting remediation Monday or Tuesday, weather permitting. More follow-up needed.

Date: 4/19/2016 **Status:** Correspondence

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Received map of the impacted area in the field to the north. The area has received moisture. Remediation should start at the end of the week. More follow-up needed.

Date: 4/20/2016 **Status:** Correspondence

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Received call from consultant working on the site that cleanup would start Friday.

Date: 4/23/2016 **Status:** Correspondence

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Received call from consultant that the northern excavated area had water in it this morning. The water had a reading of 4 millisiemens, so they will be collecting the water with a vac truck and placing it back into the company injection well. After the water is removed, they will continue excavation. More follow-up needed.

Date: 4/25/2016 **Status:** Correspondence

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

The consultant indicated that more test holes were dug to the west, and more impacted areas were found. Test holes to the south did not show impacts. A sample was taken at the bottom of the excavation where they were working on 4/23/16. The sample was a mixture of water and soil. The soil encountered was clay and then loam at below 6 feet. The area received a couple of inches of rain. They are not able to work today. I also let the consultant know that a neighbor called regarding his well. More follow-up needed.

Date: 4/25/2016 **Status:** Correspondence

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Received a call from the neighbor to the north concerned about his well. NDDoH personnel will contact him this week and obtain a sample from the wells.

Date: 4/28/2016 **Status:** Inspection

Author: Martin, Russell

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

4/28/2016 at 10:45. Met with cleanup consultant at site. Currently, work has been halted as conditions are too muddy to operate heavy equipment (site has experienced rain for the past couple of days). Large amounts of standing water visible, and main excavation is almost entirely filled with rain water. Plan is to continue scraping and excavating once the site dries out. Other work involves testing the ditches on either side of the county road adjacent to the incident site, as well as removing a culvert under the road that apparently allowed the spill to travel from the SWD to the field, instead of being stopped by the county road. After meeting with the consultant, visited two nearby landowners and sampled their water wells.

Date: 5/4/2016 **Status:** Inspection

Author: Washek, Sandi

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Arrived on site at 1:07 p.m. Weather was sunny with wind out of the SW at 15 mph. Temperature was 74 degrees F. Power Fuels was on site pumping the water out of the excavated hole located in the stubble field north of well site and disposing of the water at the Aquaterra well next door. So far this day, they had removed three truckloads at 140 barrels per load. Hope to have the dug hole empty by the end of today. Additional follow-up will be needed.

Date: 5/9/2016 **Status:** Inspection

Author: Kannenberg, Derek

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

On site: 1358 CT

Temp: 66 F

Weather: 10-15 mph. West wind. Overcast.

Site has been excavated to a large extent. However, delineation has not been completed. No soil samples had been collected yet. Samples will be collected and rushed to receive results by 05/13/16. Chloride strips revealed water in excavation to have chloride of ~784 parts per million (ppm).

At first, it sounded like the water in the excavation was rainwater. Before leaving the site, I was told that it was actually ground water. During the course of the conversation, I was also told that a strong diesel smell was encountered while excavating the site. A small pool on the east side of the excavation also showed oil effects on the surface. Some sheen was observed at the site. Recommended diesel range organics (DRO) and gasoline range organics (GRO) samples in addition to chloride tests of soil samples.

Further follow-up will be required.

Date: 5/16/2016 **Status:** Correspondence

Author: Espe, Brady

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Talked to the consultant about the preliminary sample results on the deeper excavation which show chloride levels below the action levels. The rest of the confirmation sample results will be available at the end of the week. The company will also have confirmation samples taken from the ditches.

Date: 5/16/2016 **Status:** Inspection

Author: Crowdus, Kory

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

On location 5/16/2016, at 12:22 p.m. Met with cleanup contractors. They will begin to backfill the largest excavation area. They will be taking soil samples of the two smaller excavation areas in the field to the north. Ditch area will be sampled at a later date once the work in the field has been completed. Further follow-up is required.

Date: 7/20/2016 **Status:** Inspection

Author: Stockdill, Scott

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Arrived on location 12:45, 7/20/2016.

Impacted area to the north of the road does not appear to have been leveled to grade and shows signs of incomplete remediation. The tenant did not farm though the impacted area. Remediation incomplete.

More follow-up is necessary with the responsible party to ensure proper cleanup.

Date: 8/4/2016 **Status:** Correspondence

Author: Martin, Russell

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Received lab reports for sampling done on landowner wells adjacent to spill site. Results similar to test results from one of the wells sampled before the incident.

Date: 8/24/2016 **Status:** Inspection

Author: O'Gorman, Brian

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Arrived on location at 15:45. 66 degrees F, mostly cloudy, northwest wind 20-30 mph. Walked the remediated areas and took photos. Spoke with Aqua Terra operator and was informed that additional soil had been hauled in for extra grading a week or two ago. The excavated area appeared to be at pre-spill grading, with the soils a dark brown loam from 0-4 inches and a greyish tan clay from 4 to 12 inches.

Date: 12/6/2016 **Status:** Correspondence

Author: O'Gorman, Brian

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Received an email from Cody Vanderbusch of NDIC with an attachment showing Electrical Conductivity (EC) results and chloride results from samples collected along a perimeter berm constructed by Aqua Terra as a tertiary containment system. These samples were collected due to the fact that impacted material had been used in the construction of the berm. EC values were between 1.55 ms/cm and 3.85 ms/cm with chloride values between 154 ppm and 208 ppm for the three samples shown. Additional samples were collected by the NDDoH for analyses. More followup may be necessary after results are provided. Letter added to incident folder.